

## AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

## LISTING OF CLAIMS:

1. (Original) A method for culturing a stem cell, said method comprising propagating the stem cell in tissue culture medium comprising an agent selected from the group consisting of an inhibitor of a PTPase, a modulator of an enzyme with one or more phosphate binding sites, a phosphohydrolase, a pyrophosphatase, an alkaline phosphatase, an acid phosphatase, and a modulator of a protein with one or more pTyr recognition unit.
2. (Original) The method of claim 1, wherein the pTyr recognition unit is a SH2 domain.
3. (Original) The method of claim 1, wherein the enzyme with one or more phosphate binding sites is a glucose-6-phosphate dehydrogenase, a fructose-2,6-bisphosphatase, a phosphoglucomutase, a  $Mg^{2+}$  dependent ATPase, a plasma membrane  $Ca^{2+}$  ATPases, an endoplasmic reticulum  $Ca^{2+}$ -ATPases, a P-glycoprotein ATPase activity, a  $Mg^{2+}$ -dependent vanadate-sensitive GS-conjugate export ATPase, a MRP/GS-X pump, and a  $Na^+, K^+$ -ATPase.
4. (Original) A method for culturing a stem cell, said method comprising propagating the stem cell in tissue culture medium comprising a phosphate mimic.
5. (Currently amended) A method for culturing a stem cell, said method comprising incubating the stem cells in tissue culture medium comprising a phosphate mimic; ~~wherein the stem cell undergoes self-renewal.~~
6. (Currently amended) The method of claim 5, wherein the A method for ~~culturing a stem cell, said method comprising incubating the stem cell in tissue culture medium comprising~~ comprises between 1  $\mu M$  and 10  $\mu M$  vanadate, between 10  $\mu M$  and 50  $\mu M$  vanadate, between 50  $\mu M$  and 100  $\mu M$  vanadate, between 100  $\mu M$  and 500  $\mu M$  vanadate or between 500  $\mu M$  and 1000  $\mu M$  vanadate.
7. (Currently amended) The method of claim 5, wherein the A method for ~~culturing a stem cell, said method comprising incubating the stem cell in tissue culture medium comprising~~ comprises a phosphate mimic, and wherein the culture medium is not supplemented with exogenously added growth factor.

8. (Currently amended) The method of claim 5, wherein the A method for culturing a stem cell, said method comprising incubating the stem cell in tissue culture medium comprising comprises a phosphate mimic, and wherein the incubating step elevates intracellular ATP levels in the neural stem cell by at least 25% compared to intracellular ATP levels in the stem cell incubated without phosphate mimic under otherwise same conditions.

9. (Canceled)

10. (Original) A method for culturing a stem cell, said method comprising incubating the stem cell in tissue culture medium comprising a phosphate mimic, wherein the amount of phosphate mimic is sufficient for stem cells to exhibit at least 25% more proliferation than stem cells incubated without the phosphate mimic under otherwise same conditions.

11. to 13. (Canceled)

14. (Original) A method for culturing a neural stem cell, said method comprising incubating the neural stem cell in tissue culture medium comprising a phosphate mimic, wherein the incubating step increases formation of neurospheres from the neural stem cell by at least 25% compared to the formation of neurospheres from the stem cell incubated without phosphate mimic under otherwise same conditions.

15. and 16. (Canceled)

17. (Currently amended) A cultured stem cell, wherein the cultured stem cell has been generated by the method of any one of claims 1, 4, 5, 10 or 14 ~~1-11 or 14-16~~.

18. (Canceled)

19. (Original) A method for culturing a progenitor cell, said method comprising propagating the progenitor cell in tissue culture medium comprising a phosphate mimic.

20. (Currently amended) A method for culturing a progenitor cell, said method comprising incubating the progenitor cell in tissue culture medium comprising a phosphate mimic, ~~wherein the progenitor cell undergoes self-renewal.~~

21. (Currently amended) The method of claim 20, wherein the A method for culturing a progenitor cell, said method comprising incubating the progenitor cell in tissue culture medium comprises comprising a phosphate mimic, and wherein the culture medium is not supplemented with exogenously added growth factor.

22. (Currently amended) The method of claim 20, wherein the A method for culturing a progenitor cell, said method comprising incubating the progenitor cell in tissue culture medium comprises ~~comprising~~ a phosphate mimic, and wherein the incubating step increases intracellular ATP levels in the progenitor cell by at least 25% compared to intracellular ATP levels in the progenitor cell incubated without phosphate mimic under otherwise same conditions.

23. to 28. (Canceled)

29. (Currently amended) A cultured progenitor cell, wherein the cultured progenitor cell has been generated by the method of any one of claims 19 or 20 ~~19 to 28~~.

30. (Currently amended) The method of any one of claims 4, 5, 10, 14, 19, or 20 ~~4-16 or 19-28~~, wherein the phosphate mimic is selected from the group consisting of a vanadium oxide, a derivative of a vanadium oxide, a polyoxometalate, a homopolyoxotungstate, a vanadium-substituted polyoxotungstate, an esterified derivative of 4-(fluoromethyl)phenyl phosphate, a homopolyoxoselenate, a vanadium-substituted polyoxoselenate, a homopolyoxomolybdate, a vanadium-substituted polyoxomolybdate, and a PTPase inhibitor.

31. (Currently amended) The method of any one of claims 4, 5, 10, 14, 19, or 20 ~~4-16 or 19-28~~, wherein the phosphate mimic is vanadate, orthovanadate, metavanadate, pervanadate, vanadate dimer, vanadate tetramer, vanadate pentamer, vanadate hexamer, vanadate heptamer, vanadate octamer, vanadate nonamer, vanadate decamer, vanadate polymer, vanadyl sulfate, bis(6, ethylpicolinato)(H(2)O)oxovanadium(IV) complex, bis(1-oxy-2-pyridinethiolato)oxovanadium(IV), bis(maltolato)oxovanadium (IV), bis(biguanidato)oxovanadium(IV), bis(N'N'-dimethylbiguanidato)oxovanadium(IV), bis(beta-phenethyl-biguanidato)oxovanadium(IV), peroxovanadate-nicotinic acid, aluminiumfluoride, 4-(fluoromethyl)phenyl phosphate, tungstate, selenate, molybdate, Zn<sup>2+</sup> or F<sup>-</sup>.

32. (Currently amended) The method of any one of claims 31 ~~4-16 or 19-28~~, wherein the phosphate mimic is vanadate.

33. (Original) The method of claim 32, wherein the concentration of vanadate in the culture medium is 1 µM, 10 µM, 50 µM, 100 µM, 500 µM or 1000 µM.

34. (Currently amended) The method of any one of claims 1, 4, 5, 10, 14, 19, or 20 ~~1-11, 14-16, or 19-28~~, wherein the culture medium further comprises an agent selected

from the group consisting of a growth factor, a Receptor Tyrosine Kinase agonist, and a growth factor secretagogue.

35. (Currently amended) The method of any one of claims 1, 4, 5, 10, 14, 19, or 20 ~~1-11, 14-16, or 19-28~~, wherein the culture medium further comprises an agent selected from the group consisting of an agonist of cAMP accumulation, a  $\text{Ca}^{2+}$ -transient triggering factor, and an agonist of cGMP accumulation.

36. (Canceled)

37. (Currently amended) The method of claim 4, 5, 10, 14, 19, or 20 ~~4-16 or 19-28~~, wherein the cell does not substantially differentiate during the incubating step.

38. and 43. (Canceled)

44. (New) The method of claim 5, wherein the stem cell undergoes self-renewal.

45. (New) The method of claim 20, wherein the progenitor cell undergoes self-renewal.